A07. Preliminary results of a phylogeographic study of two red algae in the Indo-Malaya region

Stefano G.A. Draisma[1]
Daniela Gabriel[2]
Phaik-Eem Lim[1]
Siew-Moi Phang[1]

[1]*Institute of Ocean & Earth Sciences, University of Malaya, Kuala Lumpur, Malaysia*

[2]*CIBIO-Acores, 9501-801 Ponta Delgada, Azores, Portugal*

The Indo-Malay region is situated in the Indo-Pacific transition zone where ocean currents from the Pacific squeeze through the Indo-Malay archipelago into the Indian Ocean. This so called Indonesian through-flow transports organismal propagules which have the potential to replenish downstream reefs. The South China Sea was a dry land during the last glacial maximum and has been recolonized from the Pacific and from the Indian Ocean when the sea level rose again. The contact zone of the two oceans' biotas may still be detectable as a genetic discontinuity. However, a genetic discontinuity may also be the cause of a contemporary barrier of gene flow. Genetic connectivities in the region were explored by studying the phylogeography of two red algal species (*Dichotmaria marginata* and *Gibsmithia hawaiiensis*) with various DNA markers and populations collected in the South China Sea, Celebes Sea, Moluccas Sea and Halmahera Sea. The chloroplast-encoded partial *rbc*L+spacer region (891 bp) and the mitochondrial *cox*2-3 spacer region (382 bp) were chosen for respective *D. marginata* and *G. hawaiiensis*, based on PCR amplifyability and variability. Only a limited number of samples has been genotyped thus far and seven haplotypes were found for each marker. None of the *Gibsmithia* specimens from the Indo-Malay region appeared to be *G. hawaiiensis*, they belong to two undescribed species; one species dominant in the South China Sea, the other one in the eastern seas. *D. marginata* is a global tropical species, the Caribbean haplotype was found in Southeast Asia. Some of the *Dichotomaria* specimens from the South China Sea belong to a different yet unidentified species. No haplotype diversity was found in the Halmahera Sea for both *Gibsmithia* sp. and *D. marginata* and for both species haplotype diversity is highest in the Moluccas Sea.